

## CLAIMS

What is claimed is:

1. A device for storing distributed data in a networked storage array, comprising:  
a mass storage controller associated with a network;  
5 a mass storage device that is controlled by the mass storage controller,  
wherein the mass storage device includes a portion of the distributed data; and  
a plurality of client systems, having client mass storage, that each store a  
portion of the distributed data in a distributed storage file on the client mass storage,  
as directed by the mass storage controller, wherein the client mass storage is used  
10 primarily for the client system's data.
2. A device as in claim 1, wherein the client systems store striped data in the  
distributed storage file of the client mass storage, where the data is a mirror of  
distributed data stored on the mass storage device controlled by the mass storage  
15 controller.
3. A device as in claim 1, further comprising a network that is coupled between  
the client systems and the mass storage controller to transfer distributed data between  
the client systems and the mass storage controller.  
20
4. A device as in claim 1, further comprising a common operating environment  
image stored on the mass storage device and distributed storage files of the client  
systems.
- 25 5. A device as in claim 4, further comprising image assembly and loading logic  
configured to assemble and install the common operating environment image, which  
is stored on the client mass storage and mass storage device, on a target client that  
calls for a new installation of the common operating environment image.
- 30 6. A device as in claim 1, wherein the mass storage controller is a hardware card  
mounted within a network server.
7. A device as in claim 1, wherein the mass storage device is a hard drive that is  
coupled to the mass storage controller.

8. A device as in claim 1, wherein the mass storage device stores parity data for the networked storage array.

5        9. A device as in claim 1, wherein the distributed storage file of the client mass storage, which contains the distributed data, is inaccessible to a user of the client system.

10       10. A device as in claim 9, wherein the distributed storage file in the client mass storage is hidden from a user.

11. A device as in claim 10, wherein the distributed storage file of the client mass storage is dynamically resizable.

15       12. A device for storing distributed data in a networked storage array, comprising:  
a mass storage controller associated with a network;  
a plurality of mass storage devices that are controlled by the mass storage controller, wherein each mass storage device includes a portion of the distributed data; and  
20       a plurality of client systems that communicate with the mass storage controller, each having a client mass storage device, including a distributed storage file configured to store parity data.

25       13. A device in accordance with claim 12, wherein the distributed storage file on the client systems each include a portion of the parity data that is inversely proportional in size to the number of client mass storage devices available.

30       14. A device in accordance with claim 12, wherein the client mass storage device is a hard drive and the parity data is stored on a portion of the client's hard drive that is unused by the client system's primary data.

15. A device in accordance with claim 14, wherein the distributed storage file is hidden from a user who is using the client system.

16. A device as in claim 12, further comprising a common operating environment image stored on the mass storage devices and the client systems.

5 17. A device as in claim 16, further comprising install logic configured to assemble and install the common operating environment image on a target client that calls for a new installation of the common operating environment image.

10 18. A device for storing distributed data in a networked storage array, comprising:  
a mass storage controller associated with a network;  
a plurality of mass storage devices that are controlled by the mass storage controller, wherein the mass storage devices each include a portion of the distributed data; and  
a plurality of client systems in communication with the mass storage controller, each having at least one client mass storage with a distributed storage file,  
15 wherein distributed data that is written to the mass storage devices through the mass storage controller is mirrored to the distributed storage file on the client mass storage.

20 19. A device as in claim 18, wherein the distributed storage file used to store the mirrored client data on the client mass storage is inaccessible to a user of the client system.

25 20. A device as in claim 18, wherein the client mass storage used by the respective client systems are selected from the group of mass storage devices consisting of hard drives, flash memory, and rewritable optical drives.

21. A device as in claim 18, wherein the client mass storage can be accessed by the client system when the mass storage controller is unavailable through the network.

30 22. A device as in claim 18, further comprising a mirroring module and a mirror link, where the mirror link allows the mirroring module to access the mirroring module of other client systems when the mass storage controller is unavailable through the network.

23. A method for installing a common operating environment from a distributed storage array on a network, the method comprising the steps of:

dividing a common operating environment image into a plurality of image segments, wherein the common operating environment image includes an operating system and applications;

allocating a distributed storage file in a mass storage on each of a plurality of client systems where image segments can reside;

storing the image segments in the distributed storage files of the client systems as directed by a storage array controller; and

adding a target client to the network that calls for a common operating environment; and

installing the common operating environment image onto the target client from the image segments in the distributed storage files.

24. A method as in claim 23, further comprising the step of assembling at least a part of the common operating environment image from the image segments in the distributed storage files in order to facilitate the installation of the common operating environment.

25. A device for storing distributed data in a networked storage array, comprising:

means for controlling the storage of distributed data on a network;

means for mass storage that is controlled by the controller means, wherein the means for mass storage stores a portion of the distributed data; and

a plurality of client systems, each having means for storing mass client data, which each store a portion of the distributed data in a distributed storage file on the means for storing mass client data, as directed by the means for controlling the storage, wherein means for storing mass client data is used primarily for the client system's data.